

Advisory Notice

Clearing House

TO: Clearing Member Firms
Back Office Managers
Service Bureaus

FROM: Clearing House Department

ADVISORY #: 05-133

DATE: July 1, 2005

SUBJECT: Clearing and bookkeeping processing for CME Auction Markets

Introduction

In September 2005, CME will launch a new initiative – **CME Auction Markets™** – in partnership with Goldman Sachs. CME Auction Markets will provide market participants with an innovative new set of event-driven economic derivative products. The auctions will be conducted using a patented process of mutualized order-filling developed and operated by Longitude, Inc. Please see:

- CME's press release, at www.cme.com/about/press/cn/05-90GoldmanSachs13741.html
- CME's new Economic Derivatives web section – at www.cme.com/economicderivatives

Access to CME Auction Markets will roll out in two phases. In the first phase, starting in September, trading access will be via web browser. In the second phase, starting in January 2006, CME Economic Derivatives products will be available for trading via CME® Globex® – for example, via iLink connections to CME Globex or via GL Trader workstations.

CME Economic Derivative products are **cleared** products, in that the full force of the CME Clearing House clearing guarantee will apply. They are not, however, CFTC-regulated futures and options on futures. In particular, customers must be eligible contract participants (ECP's) in order to participate. Also, because normal customer-segregation requirements for CFTC-regulated futures and futures-options do not apply to cash flows and collateral associated with these products, any customer cash flows or collateral associated with CME Auction Markets products **must** be kept strictly separate from those for futures and options (i.e., they must be maintained in either a "customer non-seg" or a "house" account.)

CME Auction Markets will allow customers to buy and sell digital options, capped options ("capped vanilla options"), forwards, and various pre-defined option strategies. The CME Clearing House will implement clearing processes for these CME Auction Markets products to make it easy for firms to process these new derivatives in existing futures bookkeeping systems. In particular, the Clearing House will break each derivative trade into a series of trades, into what we are calling **bookkeeping instruments**, or simply "book instruments". The book instruments will **appear** to firms' bookkeeping systems as if they are standard monthly options on monthly cash-settled non-tradeable futures. (They are **not** futures and futures-options, but they will appear as such so that they may be easily processed in bookkeeping systems.) With one small change relating to where rounding is performed when calculating premium amounts, firms should be able to process these trades in their existing bookkeeping systems without modification.

Example – a Non-Farm Payrolls Auction

A good example would be an auction held on a Friday, from 6am to 7am Chicago time, on the Change in Non-Farm Payrolls statistic scheduled to be published at approximately 7:30am Chicago time. (For many CME customers, this statistic will be their most important focus on the morning of the release.)

On the business day preceding the auction (Thursday), at approximately 4pm Chicago time, CME will publish the list of instruments eligible to trade on this auction, consisting of:

- **Capped options – capped calls and floored puts.** These are cash-settled options, at a particular strike price, on the final Non-Farm Payrolls statistic. If the statistic's final value exceeds the strike price, the buyer of a call, for example, receives money equal to the amount by which the final statistic exceeds the strike price – **except that this amount is capped.** There is a **cap price**, set as the highest strike price available for the auction, and the maximum amount which the holder of the option can receive is the difference between the cap price and the strike price. And similarly for a floored put, where the buyer of the option receives (and the seller pays) the amount by which the option ends up in-the-money, but not more than the amount by which the floor price is lower than the strike price.
- **Digital options – digital calls, digital puts, and digital range options.** These are cash-settled options which pay if the option ends up in-the-money, but for which the payout amount is fixed – *ie*, it does not depend on the amount by which the option ends up in-the-money. (It's because there are only two possible outcomes that these are called "digital" options. Another term for this type of option is "binary.") For a digital call, the option pays if the final value of the statistic is greater than or equal to the strike price. For a digital put, the option pays if the final value is less than the strike price. For a digital range option, there are **two** strike prices – a lower one and an upper one – and the holder of the option receives (and the seller pays) the fixed payoff amount if the final value of the statistic ends up greater than or equal to the lower strike, and less than the upper strike.
- **The forward** – actually, a "range forward". The purchaser of the forward receives the difference between the final value of the statistic and the trade price, if the statistic ends up above the trade price, and pays this difference if the statistic ends up below the trade price. And vice versa for the seller of the forward. Just as with the capped options, however, these amounts are capped: the maximum that the buyer can receive is the difference between the cap price and the trade price (no matter how high the statistic goes), and the maximum that the buyer must pay is the difference between the trade price and the floor price (no matter how low the statistic goes.)
- **Various predefined strategies** – combinations of this different instruments – including call and put spreads on the capped options; straddles, strangles and risk reversals on the capped options; and digital strangles and risk reversals.

At 6am, the auction opens, and auction participants may begin submitting orders, specifying the instrument they wish to trade, whether they are buying or selling, their desired trade quantity, and their limit price. As each order is submitted, or as orders are modified or cancelled, the innovative order filling process evaluates all orders across all instruments, and determines the **market price** for each instrument. These market prices will be published in real time just like the price for any product traded via CME Globex.

Note, however, that **no trades occur while the auction is open.** The indicative market prices published in real-time during the auction are telling auction participants what their fills will be if there were no new orders or no changes to existing orders for the remainder of the time while the auction is open. For each order, if the limit price is better than the current market price, that means that if the auction ended then the order would be filled in total, and if the limit price is worse than the current market price, the order would not be filled. If the limit price happens to be exactly equal to the current market price and the auction ended then, the order would be filled partially on a pro rata basis (which could range from 0 to 100%), and market data messages sent by CME via iLink or web connection, as appropriate, during an auction will indicate the current indicative percentage fill.

At the scheduled time of 7am, the auction closes. New orders will not be accepted, and existing orders can no longer be modified or cancelled. The market prices in effect at this time become the final market prices at which orders are filled. Auction participants now receive their "fill" messages. All trades for a given instrument occur at the market price for that instrument (plus or minus the applicable fee, as described below.) In other words, a customer's order price is truly a limit price: if the order is filled, it will be either at the order price, or at a better price, and if the order price is worse than the final market price, the order will not be filled at all.

The special mutualized order-filling process looks at all orders for all instruments in the auction in determining the market prices for all instruments and what orders can be filled. There will not be a buyer for every seller. The Clearing House will be specified as the opposite side of every trade.

Clearing processing for the "bookkeeping" instruments

Many firm bookkeeping systems may not be able to process trades in the actual auction instruments – the capped options, the digital options, and the range forward. To directly process these instruments, systems would have to handle (a) the different product characteristics – for example, the digital range options, with fixed payouts and two strike prices, (b) trade quantities which may be expressed as nominal amounts, and hence which may be very large, and (c) strike prices which may be negative.

Therefore, to allow clearing firms to participate in this new market using existing bookkeeping systems, the Clearing House will break up each trade in an actual auction instrument into a series of trades in what we are calling **bookkeeping instruments** (or just "book instruments.") The trades in the book instruments will **appear** to be ordinary options trades, in standard monthly options on cash-settled non-tradeable futures, and should flow through firm bookkeeping systems with practically no modifications. In particular:

- Firms will receive ordinary TREX confirm messages for the trades in the book instruments. They will appear as ordinary GLOBEX executions, ready to be loaded to books.
- Large execution quantities will be broken up into book-instrument trades in "big" and "little" option contracts. For example, an actual trade quantity of 77,000 might be broken up into a quantity of seven "big" contracts (with a contract size of 10,000), and 7,000 "little" contracts (with a contract size of 1.)
- Strike prices will be indexed as needed to ensure that they are always positive.
- Trades in the book instruments will appear on the Trade Register like any ordinary trade. With one small change relating to how rounding is performed, option premium amounts will be calculated and banked normally.
- Performance bond requirements for positions in the book-instrument options will be calculated in SPAN® normally, without modification.
- The book-instrument options are European-style, and may not be exercised prior to expiration. At expiration (when the final value for the statistic is published), contrary instructions – in-the-money abandonments and out-of-the-money exercises – will not be accepted, and all in-the-money options will be automatically exercised. The result will be transactions appearing to be futures – the "book instrument underlying futures" -- at the strike price. These will immediately be marked to the final price, causing the payout amounts to flow like ordinary settlement variation. The book-instrument futures positions will then be removed automatically the next morning.

Again, note that the trades in the book instruments are not really trades in futures options. They are an artificial booking construct, which when aggregated behave economically exactly like the trades in the actual auction market instruments. The trades in these book instruments appear as if they are futures options, strictly to facilitate their processing in existing bookkeeping systems.

Money calculations for the book instruments

When calculating premium for trades in futures options in a bookkeeping system, you take the trade price and multiply by the contract value factor (the multiplier that converts the quoted price to its monetary value.) Then, since this amount may come out to a value smaller than a penny, you round to the nearest penny (the "normal precision" of the settlement currency.) Then, finally, you multiply by the trade quantity.

In other words, for futures options, calculate the premium for a quantity of one, then round, then multiply by the trade quantity.

For the trades in the book instrument options, however, because some are in the very small "little" contracts, this method of rounding would introduce too much error. Therefore, for these trades, you take the product of the trade price, the contract value factor, and the trade quantity, and then you round. In other words, calculate the total premium, and round at the end.

For variation calculations for futures versus the artificial book-instrument "futures", the rounding difference is analogous. For futures:

- For each of the trade price and the marking price, determine the monetary value by multiplying the price by the contract value factor, and rounding.
- Take the difference between these two rounded monetary values, and multiply by the trade quantity.

Whereas for trades in the book-instrument "futures", you simply take the product of the price difference, the contract value factor, and the trade quantity, and then you round.

In the FIXML-based Trade Register file, and in the SPAN file, we will introduce attributes which firms may use to parameterize these different rounding methods.

Other than this small change relating to how rounding is done when premium and variation amounts are calculated for the book instruments, there should be no changes required in bookkeeping systems. Trades in the book instruments will flow through clearing and books like trades in any CME-cleared products.

Trading eligibility

As described above, only **eligible contract participants** ("ECP's") may trade in CME Auction Markets. ECP's must meet minimum requirements as defined in Section 1(a)12 of the Commodity Exchange Act.

To ensure this, each clearing firm wishing to participate will register each participating eligible customer account. The registration will specify the **trader ID's** for which it wishes to allow access, and for each such trader ID, the individual **customer accounts** to be given access. Note that the trader ID corresponds either to an iLink connection or to a GL Trader workstation.

All parties connected to CME Globex will be able to submit orders for CME Economic Derivative products, but unless the trader ID and individual customer account are registered, the order will be rejected, together with a message indicating why.

Credit limits

For many of the statistics on which CME will list derivatives, the auctions are held on the same day that the final value of the statistic is released. Executed trades give rise to positions, which will therefore result in both premium and final payout flows on the same day. In this case, there is no time for the Clearing House to collect a performance bond requirement from the clearing firm, or for the clearing firm to collect such a requirement from its customers.

Therefore, we will implement a flexible system of **credit controls**. For each participating clearing firm, the Clearing House will establish an overall credit limit value. For each participating trader ID, and then for each individual registered customer, the firm may establish a specific credit limit.

Whenever an order is submitted in a CME Auction, the effect on credit is evaluated first, before the order is accepted. The evaluation process assumes that the order would be entirely filled, at the limit price (the worst possible price), and then that the worst possible outcome occurs. Taking into account all already-accepted orders, plus the new order, the process looks to see if more credit would be consumed than is available, if the new order were accepted. If it would, the order is entirely rejected.

For example, for a buy order for an option, the worst possible outcome is that the order is filled in its entirety at the limit price, and the buyer is then liable for the maximum premium. For the seller of an option, the worst outcome is that the seller is liable for the largest possible payout, less the premium that the seller would receive at the limit price.

Credit exposures are evaluated in real-time at all three levels: the firm as a whole, the individual trader ID, and the individual customer. Firms will have much flexibility in how they assign individual customer credit limits, subject to oversight by the Clearing House. For example, suppose a given clearing firm trades through exactly one trader ID, and has five registered customer accounts, and that the Clearing House has specified a \$50 million credit limit for the firm. The firm could choose to give each customer a \$20 million limit. In this case, none of the five customers would be able to consume more than \$20 million in credit. All five customers together could not consume more than the \$50 million limit specified for the firm.

Again, if any order would cause available credit at any level to be used up, the order is rejected in its entirety. No orders will be partially accepted.

Payments and collateral flows must be kept separate from those for "customer segregation"

As described above, products listed through CME Auction Markets are **not** regulated futures or futures options, and as such, "customer segregation" requirements do not apply.

Therefore, firms **must** keep all payment flows, and all collateral deposited, related to CME Auction Markets, **strictly separate** from payment flows and collateral deposits for customer positions in products to which segregation requirements do apply.

For proprietary trading done by the firm, the origin on the trades should be specified as "house", exactly as it would for house trades in futures and futures options. These will appear on the firm's normal "house" trade register, and the payment flows will be banked through the firm's non-segregated bank account.

For customer trades, firms may choose to specify the origin on the trade as either "customer" or "house". If they specify "customer", trades will appear in a separate section of the "customer" trade register, but **the cash flows and the performance bond requirements will be routed to a special "customer-non-segregated" settlement account**. Firms may choose to use their existing non-seg bank accounts for these, or they may open new ones, but they may not use customer-seg bank accounts.

CME Auction Market products will not be subject to Large Trader Reporting requirements.

Fee processing

CME fees for trades in CME Economic Derivatives will differ from fees for futures contracts. They will be set at a fixed, small percentage, generally based on the size of the trade. These fees will be assessed by directly adjusting the trade price.

As described above, all buyers and sellers of a particular option receive the same **market price** – the final market price when the auction closes. However, the execution (or booked) price of a trade will reflect a fee which includes both the execution fee and CME clearing fee. Therefore, the **execution price** for the buyers will be slightly higher than the market price, and the execution price for the sellers will be

slightly lower than the market price. It is the execution price, not the market price, that firms will see on their TREX confirm messages for loading the trades in the book instruments.

In other words, the fee on options is directly included in the premium paid or collected, and the fee for forwards is included by adjusting the fixed price of the forward. Therefore, there is no need for these trades to be processed in the Exchange Fee System (EFS).

Give-ups (but not average-pricing) will be allowed for the trades in the book instruments, and firms will be charged the standard, nominal clearing give-up fees for these. No clearing fee will be assessed for the option exercise when the option book instrument positions are converted into trades in the artificial underlying "futures book instruments."

Clearing files and reports

The book instruments will be included in the normal CME edit file, settlement price file, and SPAN file, and will have a daily settlement price. They will also appear on all normal clearing reports.

The normal Trade Register file and report will show only the book instruments. Participating firms will also receive, however, a special CME Auction Markets Trade Register file (in FIXML) and report. These will show both the filled trades in the actual auction instruments and their breakdown into book instruments. Firms will be able to use this special Trade Register to tie the book-instrument transactions back to the actual trades resulting from auctions.

Prior to each business day, a special CME Auction Markets edit file (and corresponding report) will be published showing firms the schedule of upcoming auctions and, for each auction on the next business day, the detailed set of instruments eligible to trade.

Phased rollout

As described above, CME Auction Markets will be introduced in two phases.

In the first phase, beginning this September, authorized users may participate in these auctions via browser-based interfaces available through **cme.com** and other channels, as will be described in subsequent publications.

In January, in the second phase, access via CME Globex will be made available. Note that the browser-based interface available through **cme.com** will also be available, either for order entry or for monitoring auction progress.

Testing process

CME will provide end-to-end testing opportunities for interested firms beginning in August. As described herein, there should be no processing changes required for the book-instrument transactions other than the minor adjustment to rounding for the money calculations.

For more information

For more information, please contact the CME Clearing House at (312) 930-3170.

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